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AUTHOR Reber, Anne M.
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ABSTRACT

The Wechsler Intelligence Scale for Children-Third Edition (WISC-III) is an individually administered test of intelligence for assessing children aged 6 through 16 years, 11 months. The WISC-III consists of several subtests, each classified into a verbal or performance scale. The child's performance on these measures is summarized in three composite scores, Verbal, Performance, and Full Scale intelligence quotient (IQ). Use of the WISC-III requires an examiner trained in administration and interpretation of standardized clinical instruments. Major features of the previous versions have been retained in the third edition, with changes described in detail in the manual. The new manual also includes a full discussion of validity issues. For the majority of items, scoring is objective, and little interpretation is necessary. Computerized scoring is available. Norms for this edition are from a standardization sample representative of the United States population of children (2,200 cases from 31 states). A practical evaluation of the WISC-III indicates that complexity of use is a major drawback to this widely used test. (Contains 7 references.) (SLD)

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ANNE M. REBER

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A Review of the Wechsler Intelligence Scale for Children-Third Edition (WISC-III)

Anne M. Reber
Graduate Assistant
Department of Educational Psychology
Texas A&M University
College Station, Texas 77843-4225
(409) 845-1801

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Title: Wechsler Intelligence Scale for Children-Third Edition (WISC-III)
Author: David Wechsler
Publisher: The Psychological Corporation (Harcourt Brace Jovanovich, Inc.)
Date of publication: WISC, 1949; WISC-Revised, 1974, WISC-III, 1991
Date of most current manual: 1991 with restandardization of norms
Time required to administer: Approximately 50-70 minutes for regular battery/10 subtests; an additional 10-15 minutes for 3 supplementary subtests

Cost of materials:

Entire kit which includes: manual, stimulus booklet, 25 record forms, object assembly puzzles, object assembly layout shield, block design cubes, picture arrangement cards, two Mazes Response Booklets, two Symbol Search Response Booklets, Coding Scoring Template, Symbol Search Scoring Template, and attache or soft case.-$520.00

The following items are sold separately as replacement items:
manual, stimulus booklets, mazes response booklets, symbol search booklets, record forms, object assembly puzzles

Computer Scoring Assistant for the Wechsler Scales-1992; IBM Version-$98.00

Brief Description of Purpose and Nature of Test

The Wechsler Intelligence Scale for Children-Third Edition (WISC-III) is an individually administered test of intelligence for assessing children aged 6 years through 16 years, 11 months. As with all Wechsler intelligence scales, the WISC-III consists of several subtests, each classified into a Verbal or a Performance Scale. There are six Verbal and seven Performance subtests of which ten comprise the regular battery and three are supplementary or optional. The child's performance on these measures is summarized in three composite scores, the Verbal, the Performance, and Full Scale IQs. The scores on the Verbal and Performance subtests combine to yield the Full Scale IQ score.

The use of the WISC-III requires an examiner trained in the administration and interpretation of standardized, clinical instruments. Its uses can be found in "psychoeducational assessment as part of the educational planning and placement, diagnosis of exceptionality among school-aged children, clinical and neuropsychological assessment, and research" (Wechsler, 1991, p. 7).

Like the WISC-R, the items within each of the subtests are arranged in order of difficulty,

from simple to complex. The subtests include, but are not limited to, test items such as naming the missing part in a picture, describing the similarities in given pairs of words, arranging pictures so they tell a story, arithmetic problems, copying block designs with plastic blocks, and object assembly with puzzle pieces.

Practical Evaluation

Although numerous improvements were made and a substantial number of new items added, the major features of the WISC and the WISC-R were kept intact in the WISC-III. The manual provides detailed descriptions of the changes made in each of the subtests, in addition to providing a description of the new optional subtest, Symbol Search.

Overall, the WISC-III manual is relatively easy to use. All the information needed to administer and score the test is present in this one manual with easy-to-reference sections and a crackback cover and binding that allow it to stand freely when opened. The text is easy to read with ample information, probably more than the average test examiner ever uses.

The WISC-III assessment kit contains everything one will need to test a child; however, the complexity of the administration of the test requires considerable familiarity with the manual and the materials in the kit. The manual, as well as several test examiners interviewed, repeatedly indicated that "practice makes perfect" to ensure a smooth, uninterrupted administration of the test. The instructions and test items must be presented exactly as they appear in the manual, timing is critical, and the examiner must score each item during testing in order to know whether to discontinue a subtest. In looking at Vernon's (1987) review of the WISC-R, it appears that the rules for administrating the WISC-III have changed little, if any, from its predecessor, the WISC-R.

Some of the materials and manipulatives used by the examiner and examinees have been redesigned. New full color art was added to heighten children's attentiveness and perception of

realism. The Object Assembly Layout Shield is free-standing which allows the examiner to use both hands to manipulate the subtest pieces. Even the boxes in which the materials are stored are now stronger to hold up after repeated use.

For the majority of the WISC-III items, scoring is objective and little, if any, interpretation of the criteria is necessary. For those items requiring some judgment on the part of the examiner, the manual provides examples on what may be accepted as a correct answer and the amount of points that may be awarded. A child may score 2, 1 or 0 points depending on the accuracy of his/her answer on any of the subtest items. The Record Forms used to record the scores are designed to correlate with each subtest in order of its administration.

Though the WISC-III is touted as being a good predictor of academic achievement and a good instrument for the diagnosis of intellectual retardation (Banas, 1993), it shows some limitation in being unable to achieve IQ scores lower than 40 and higher than 160. In addition, the test does a poor job of discriminating the *abilities* of a child with moderate to severe mental retardation versus the child's disabilities.

A computerized scoring program is also available which will automatically generate score profile reports for the WISC-III.

Technical Evaluation

The principal goal of the development of the WISC-III was to update the norms. The norms presented in the manual were derived from a standardization sample that was representative of the United States population of children. Data gathered in 1988 by the U.S. Bureau of the Census provided the basis for stratification of the following variables: age, gender, race/ethnicity, geographic region, and parent education. The sample consisted of 2200 cases from 31 states across the nation. There were 200 children in each of the 11 age groups with an equal number of males and females in each age group. The proportions of the different race/ethnic groups

were based on the race/ethnic group proportions of children aged 6-16 years in the U. S. population according to the 1988 Census. Parent education was divided into five categories and the sample was stratified according to the responses received: 8th grade or less; 9th through 11th grade; high-school graduate or equivalent; 1 through 3 years of college or technical school; 4 or more years of college.

For each of the 13 subtests, the distribution of each age group's raw scores was converted to a scale with a mean of 10 and a standard deviation of 3. Each of the distributions of the Verbal, Performance, and Full Scale IQ scores and the four index scores has a mean of 100 and a standard deviation of 15. The WISC-III is normed according to age groups although special group studies were conducted on children with mental retardation, learning disabilities, attention-deficit hyperactivity disorder, severe conduct disorders, epilepsy, speech/language delays, hearing impairments, and children in gifted programs.

The reliability coefficients for all subtests except Coding and Symbol Search (because they are speeded tests) are split-half correlations corrected by the Spearman-Brown formula. These coefficients ranged from .69 (Object Assembly) to .87 (Vocabulary and Block Design). Reliability coefficients for Verbal, Performance, and Full Scale IQs were .95, .91, and .96; and for the factor-based scales of Verbal Comprehension, Perceptual Organization, Freedom from Distractibility, and Processing Speed, the coefficients were .94, .90, .87, and .85 respectively. The mean retest coefficients of the subtests ranged from .66 (Object Assembly) to .89 (Vocabulary) across the age groups. Retest coefficients for Verbal IQ, Performance IQ, and Full Scale IQ fell in the range of .86 to .95. As expected, the reliability coefficients for the IQ and factor-based scales are generally greater than those for the subtests with Performance reliability coefficients always lower than the Verbal reliability coefficients.

As stated earlier, the majority of the test items on the WISC-III are objective, therefore,

interscorer reliability was high. Excluding the subtests of Similarities, Vocabulary, and Comprehension (which require some judgment), interscorer agreement averaged in the high .90s. Interscorer reliabilities were .94 for Similarities, .92 for Vocabulary, and .90 for Comprehension.

Anastasi (1988), in her commentary of the WISC-R manual, commends the inclusion of tables giving the standard errors of measurement for subtests and for Verbal, Performance, and Full Scale IQs within each age group. This table is found again in the WISC-III manual; it gives the standard error of measurement for the Full Scale IQ as 3.20 points.

A concern with past Wechsler scales was the lack, or exclusion, of information on validity in the manual. In this third edition, there are 42 pages devoted to the subject of validity. Construct-related and criterion-related validity are discussed in terms of the WISC-R because of the similarities between the WISC-III and the WISC-R and because of the abundance of research already accumulated on the WISC-R. Internal validity is specifically discussed in relation to the WISC-III's intercorrelation of its subtests, Verbal and Performance scales and factor-based scales. The average correlation coefficient between Verbal and Performance, across age groups, was .66 while the average correlation coefficients between Verbal and Full Scale and Performance and Full Scale were .92 and .90, respectively. Convergent and discriminant validity are both evidenced in the relationships between the Verbal and Performance subtests.

Factor analyses' results brought about four factor-based scales for the WISC-III. The first two factors, Verbal Comprehension and Perceptual Organization, are identical to those found in the WISC-R. The third factor, Freedom from Distractibility, is slightly different than the third factor in the WISC-R, and the fourth factor, Processing Speed, is altogether new.

Finally, this section of the manual discusses studies that address the issue of equivalence of

the WISC-III and other intelligence measures, the relationship of the WISC-III to various measures of academic achievement, and special group studies. A concern with the studies is that each is characterized by a very small sample size. In addition, the special group studies' children are not proportionally representative of the population from which they were chosen. In defense of the WISC-III, it is stated that the data obtained on the special groups is not meant to be normative for these groups.

Reviewer Comments

This reviewer was unable to find a single written review of the WISC-III in publication. Obviously, the relative newness of the instrument contributes to this lack of information; however, it is somewhat surprising considering how the WISC-III is widely used in schools and clinical settings across the country. Sources were found that identified the WISC-III as being used by "educators in planning remediation of the identified deficits (based on WISC-III results) and in the writing of individual educational plans (IEPs)" (Whitworth & Sutton, 1993, p. vii) and for "providing a learning profile" (Banas, 1993, p. 10). Nicholson and Alcorn (1993) presented a paper on the interpretation of the WISC-III and its subtests which detailed the subtests, factors, IQs, and indices. The paper also provides a *Worksheet* developed by the authors "that enables the evaluator to systematically examine a number of factors influencing achievement, and provides a sound basis for making educational placement and curriculum recommendations" (p. 9).

The most specific piece of review information found on the WISC-III was in the form of a rating scale provided by Hammill, Brown, and Bryant (1992). Overall ratings of the Verbal and Full Scale IQs were A's whereas the Performance IQ scored a B. The Indices of the factor-based scales all scored an overall rating of B. The individual subtests did not fare as well; Arithmetic, Comprehension, Coding, Picture Arrangement, Object Assembly, Symbol Search,

and Mazes all scored an overall rating of F. Reliability and validity scores of A's and B's were obtained on the IQs and Indices; however, reliability of the same subtests as mentioned above scored F's.

Summary Evaluation

A practical evaluation of the WISC-III reveals some areas of concern in the area of administration and scoring of the test. While the manual is easier to use, the administration of the test with all its parts has increased in complexity. Only an experienced examiner can perform the assessment as smoothly as the manual recommends. The WISC-III has also increased the number of items in the test thereby making for a longer testing situation. Of most concern to examiners interviewed, however, is the differences in scores that are being obtained on the WISC-III versus its predecessor, the WISC-R. In practice, the scores are significantly lower than those obtained with the WISC-R and lower than the manual predicts them to be; and because the lowest IQ score to be achieved using the WISC-III is 40, the WISC-III is not a good discriminator of strengths and weaknesses for children with moderate to severe retardation.

This reviewer feels the WISC-III falls short in the area of sample size and for norms the representativeness of the population of students with disabilities. Seven percent of the WISC-III standardization sample consisted of children with disabilities, yet the average percentage of persons with disabilities in any population is ten to twelve percent. The special group studies were interesting to read, but the extremely small sample sizes here make them less useful.

Some noteworthy features of the WISC-III include the computerized scoring; the complete statistical summary covering reliability and validity; and the individualized attention that this test can give when testing a child with unusual strengths or weaknesses or with a suspected or confirmed disability. These features may make the WISC-III better than previous versions.

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